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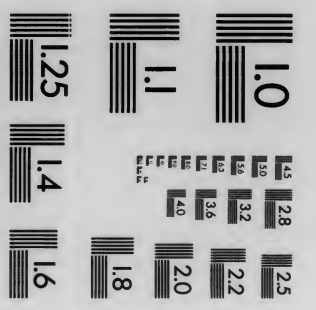
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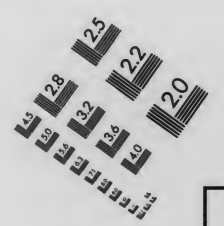
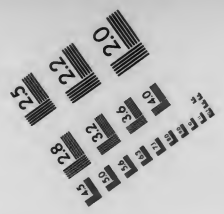
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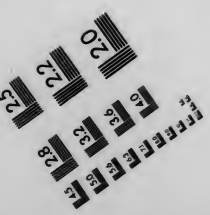
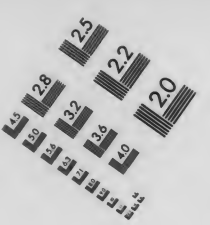


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Volume 1

BÖHM-BAWERK, E.

CAPITAL AND INTEREST ONCE MORE:
I. CAPITAL vs. CAPITAL GOODS.

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CAPITAL AND INTEREST ONCE MORE:

I. CAPITAL VS. CAPITAL GOODS

BY

E. BÖHM-BAWERK

REPRINTED FROM
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VOL. XXI, NOVEMBER, 1906

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... THE ...

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Published for Harvard University

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I believe I shall make no mistake in considering the first-named work as that which proposes the greatest changes from the traditional treatment of the subject; and I think that I am not mistaken in believing that during the comparatively short time since the appearance of Professor Clark's book there are significant and increasing indications of the influence which his special doctrines exercise, not only in his own country, but elsewhere also. I have, therefore, every ground for giving attention above all to Professor Clark and to his work.

I have read Professor Clark's admirable book with the double pleasure derived from a work which is at once a scientific achievement and a work of art. Professor Clark has a gift of shaping and ordering his matter, of animating it by attractive form, and of illuminating it with striking illustrations, which has a near relation to the talents of an artist or poet. The pleasure of reading was long undisturbed. I was delighted with the clear and comprehensive statement of the main problems, the exposition of the several tasks of economic science, the clear formulation of the hypotheses underlying static laws, the plastic art with which the realization of abstract laws under concrete conditions was described. I found myself in agreement with Professor Clark on certain fundamental points, as on nature and origin of value and on the principles of substitution and imputation, and long had the impression that no conclusions could follow from such premises which would not recommend themselves to me.

Nevertheless, to my great regret, the point was reached where I had to differ. Our paths of reasoning began to diverge, at first slightly, then more and more, on a subject which had already been the occasion of scientific controversy between us. This is the noted conception of "true capital" (formerly called by Clark "pure capital") as a "permanent abiding fund," to be distinguished from the

"capital goods" in which this fund is at a given time embodied.

Some years ago I had occasion to sound a note of warning against this conception, on the ground that it departed from solid contact with concrete facts and ascribed reality and exactness to notions which were hardly more than figures of speech. Professor Clark then replied, and a discussion ensued in the columns of this journal, which may have removed some misunderstandings, but left neither contestant convinced.¹

I am aware that the conception of capital which I then criticised has rather gained than lost in scientific prestige during the years. Professor Tuttle has recently declared it in these columns "the most notable of the many important contributions of this brilliant writer."² Professor Seager's exposition comes very close to the Clarkian mode of treatment.³ There are echoes of it in the writings of Cassel and Seligman.⁴ Professor Fetter, whose treatment of the theory itself differs distinctly from Clark's, yet makes his bow to that writer's treatment of capital.⁵ Professor Carver, to be sure, differs without qualification: "Capital is not value, but things."⁶

If it were simply a matter of definition, I should not again take up my pen. In matters of definition and name the choice is commonly not between the true and the false, but between the serviceable and non-serviceable. As

¹ See Professor Clark's essays, "The Genesis of Capital," *Yale Review*, November, 1893; "The Origin of Interest" in the *Quarterly Journal of Economics*, April, 1895; and "Real Issues concerning Interest," *Ibid.*, October, 1895; and my article on "The Positive Theory of Capital and its Critics," *Ibid.*, January, 1895.

² *Quarterly Journal of Economics*, November, 1904, p. 88, note 1.

³ Compare, for example, his *Introduction*, p. 126.

⁴ For example, *Nature of Interest*, p. 167; *Principles of Economics*, pp. 215, 265, 318, 392 ff., and elsewhere.

⁵ "Capital is the value equivalent of a sum of money 'invested,' 'clothed' in forms of wealth purchased and exchanged." *Principles*, p. 115.

⁶ Carver's *Distribution of Wealth*, p. 219.

Professor Clark has remarked with perfect truth,¹ "It may, indeed, be possible to carry through an entire study of economic science the conception of phenomena arranged in an abnormal manner." Bad terminology is like an imperfect and perhaps dangerous tool, with which a master may none the less achieve the right product, even though with difficulty. Such seemed to me the situation in 1895. I then warned against the conception of "pure capital" as distinguished from "capital goods" as a dangerous one, but added that Professor Clark had succeeded in keeping free from the erroneous conclusions which might be derived from his dangerous premises.

The situation has now changed. In his *Distribution of Wealth*, Professor Clark has based on this conception an explanation of interest which seems to me erroneous. This explanation does not solve the problem, but evades it. Under these circumstances, notwithstanding Professor Clark's high authority, the more because of that authority, I think it my duty to resume the controversy.

Professor Clark objects to considering capital as a total or a quantity of "capital goods." "Capital goods" are concrete instruments of production, such as raw materials, machines, tools. Professor Clark reckons land also in this class, a point upon which there may be difference of opinion, but which does not here concern us.² Capital itself, however, or "true capital," is something different. Professor Clark cannot say enough, in repeated and richly varied phraseology, of this distinction. Capital is "a sum of productive wealth, invested in material things which are perpetually shifting"; "a quantum of matter of the kind

¹ Clark's *Distribution of Wealth*, p. 150.

² I take this occasion to remark that I have not overlooked the recent rich and interesting literature on the definition of capital, in the important contributions of Professors Marshall, Irving, Fisher, Tuttle, and others. I do not here consider them, lest the discussion be unduly prolonged. I hope to consider these other phases of the subject on another occasion.

defined as producers' goods, measured in terms of value and having the characteristic of forever shifting its bodily identity"; "an endless succession of shifting goods always worth a certain amount"; or "a certain amount of 'money' permanently invested in a succession of perishable things, or finally, in short, "a permanent abiding fund of productive wealth."¹

I should probably accede to all of these definitions, or to most of them, if it were permitted me to regard them as explanatory phrases towards some final definition, and this the obvious one by which capital is nothing more than the sum and substance of the productive instruments or capital goods which constitute it. Professor Clark and I agree on certain positive facts which he brings into sharp relief in his definitions. I, too, believe that capital is a "fund" or "quantum" of matter. I think it clear that any one who wishes to make an estimate of the size of this fund must measure it, not by counting the pieces or calculating their volume or weight, but by measuring it in terms of value—nowadays in terms of money. Finally, it will be admitted on all hands that the community's instruments of production, in distinction with (say) a collection of fossils or of incunabula, does not maintain itself by perpetuation of the individual pieces, but by a process of constant change and reproduction. To use two similes of Professor Clark's, a waterfall persists notwithstanding change of the falling water, a forest notwithstanding constant growth and felling of the trees. The same truth holds good (barring exceptions of the sort just noted) of almost anything described as a continuing total; thus, of the population of a village, the rolling stock of a railway, the faculty or student body of a university, the merchant marine of a country, the garrison of a fortress, and the like.

¹ *Distribution of Wealth*, pp. 118-121, and elsewhere.

If Professor Clark were to content himself with emphasizing matters of this sort, I should have no occasion to differ with him, or, rather, he would have no occasion to enter into controversy with me.¹ These things I have myself set forth in their proper places. But Professor Clark does not content himself with this. Like the true devotee, he wishes us to fairly abjure the notion that capital is made up of capital goods. This seems to him so dangerous an error that it will infallibly lead the analysis of capital into the wrong paths. Only if it be abandoned, is there prospect of solving the problem.²

The situation is curious. Professor Clark regards that as heretical and destructive which I, on my part, regard as so natural and obvious that I find difficulty in stating the grounds of my belief. The endeavor to give reasons for that which is a matter of course almost inevitably leads to the commonplace or to tautology. But let me call attention to something like this. How has one ever come to a conception of capital? It has been observed that all sorts of things, such as factory buildings, spinning machinery, hammers, wool, coal, iron (and also, if you wish), differ from consumers' goods in this regard, that they have a very real effectiveness in production. Hence the generic conception or definition for indicating this quality common to them all. Further, the need was felt, as with so many other conceptions, of indicating not only individual things of this kind, but groups or quantities of them; and something like an agreement was reached to use the word "capital" for this terminological purpose. My question now is whether it is not obvious that by "capital" we mean a sum of productive instruments,—precisely those instruments to which the generic term was applied. Capital is just as much a sum or number of productive instruments, of capital goods, as a forest is a

¹ See his article on the "Genesis of Capital," p. 306.

² *Ibid.*, p. 302.

number of trees, a population a number of people, and a library a number of books. I need only cite Professor Clark himself. "Capital consists of instruments of production, and these are always concrete and material";³ "capital consists in self-renewing goods";⁴ "the concrete things that compose it";⁵ and "helps to constitute it";⁶ the capital of a railway is "its concrete and material outfit of instruments for carrying passengers and merchandise."⁶ The capital of the world is pictured to us as "one great tool in the hand of working humanity—the armature with which humanity subdues and transforms the resisting elements of nature."⁶ And from such expressions shall we suppose it to be wrong and sinful, or merely obvious, that this equipment of humanity is the whole of the concrete material instruments of production, of which, according to Professor Clark's own words, capital consists and of which capital is composed?

Oddly enough this is not Professor Clark's conclusion. Let us examine the ground on which he contests it.

His strongest ground is stated in the following terms: "The most distinctive single fact about what we have termed capital is the fact of permanence. It lasts, and it must last, if industry is to be successful. Trench upon it—destroy any of it, and you have suffered a disaster. . . . Yet you must destroy *capital-goods* in order not to fail. Try to preserve capital-goods from destruction, and you bring on yourself the same disaster that you suffer when you allow a bit of capital to be destroyed. . . . The point of sharpest contrast between capital and most capital-goods is, indeed, the permanence of the one, as compared with the perishability of the other."⁷ Things so differently constituted, according to Professor Clark, cannot be identical.

³ *Distribution of Wealth*, p. 116.

⁴ *Ibid.*, p. 265.

⁵ *Ibid.*, p. 269.

⁶ *Ibid.*, p. 335.

⁶ *Ibid.*, p. 249.

⁶ *Ibid.*, p. 117.

⁷ *Ibid.*, p. 117 *seq.*

I believe that Professor Clark has allowed himself to be ensnared by a dialectic antithesis. The investigator has given too much play to the rhetorician, the economist to the grammarian. The nature of his error will be obvious from a trivial and very simple example. Does any one doubt that a table service for twelve persons consists of a real quantity of concrete things, such as plates, saucers, spoons, forks, knives? And yet here we have this same situation, that each one of these pieces is perishable, and that the housekeeper keeps the service intact for an indefinite period by steadily replacing what is broken or worn out. Here, too, we can say, by way of antithesis, "The service remains, the individual perishes." Would any one wish to base upon this state of facts, or rather upon this use of language, the scientific conclusion that the service is not identical with the totality of the pieces, but is an essentially different entity? What manner of entity should this be? Surely, not bodily different. Is there a different spiritual entity, which is embodied as a sort of soul in the plates and knives? The notion is absurd. Or there is, perhaps, no entity at all, but only a mode of speech, a mere abstraction? Hereof we shall have occasion to speak presently.

Is the crew of a ship, the garrison of a fortress, something different from the individuals who make up these totals? And, if something different, what in the world is it? Yet here, too, it might be said with the same antithesis, "The garrison of Gibraltar is something permanent, durable, maintaining itself through centuries, while not a single one of the soldiers constituting that garrison has lived through the centuries," whence one should conclude that the garrison is something different from the soldiers.

I think the actual facts which underlie all these attempts at distinction are easy to understand. A given species continues to be represented through a period of time by

individuals who always show the characteristics or earmarks of the species, and whose number numerically remains constant. In this sense it can be said that the species remains, tho the individuals change. But, obviously, the continuance of the species means simply the presence of the individuals who represent it at any moment. It would be a deceptive notion to suppose that there must be a third thing different from the individuals in order that the species may continue. Whatever is to be done by the garrison of the fortress or is to happen to the garrison must be done by the individuals or must happen to them. Whatever is to happen to capital must happen to the capital goods which constitute it or will not happen at all.

And what of this rhetorical antithesis which is so enticing to Professor Clark? It is nothing more than a rhetorical antithesis. It does not distinguish, as Professor Clark thinks it does, between concrete things, one of which remains, while the other disappears. This permanent, unchanging thing which he contrasts with the shifting realities exists only in the realm of thought as an abstraction. As a matter of fact, the garrison at Gibraltar is not always the same, tho ten thousand soldiers have held the fortress through the centuries. It is not the same capital which I own, if I have raw materials and machines to the value of one hundred thousand dollars this year and have capital of the same value next year. We think abstractly of certain qualities which the actual objects have in common from year to year. In thinking, for instance, of "my capital of one hundred thousand dollars," I have in mind only three things with regard to that capital; namely, productive instruments to the value of one hundred thousand dollars. A year later other articles may have the same three earmarks: the same conception applies to them. They are again "my capital of one hundred thousand dollars." This does not mean that the

two things are really identical. Very likely not one piece of my last year's possessions remains this year. Very likely this year's possessions differ in various ways from last year's, and are identical only in the three earmarks which characterize "my capital of one hundred thousand dollars." This degree of continuity suffices to justify the application of the same conception; but it is clear that the continuing element is not something embodied in the capital goods, but a mere combination of certain characteristics, which are pure abstractions. If anything is "embodied" in capital goods, it is not something different from them, but simply a definition of them.

It is significant that Professor Clark himself admits as much as this, in the midst of prolonged explanations which are designed to prove just the contrary. He feels that his true capital must be something real, no mere scheme, no empty abstraction, if it is to have the effects ascribed to it in explaining concrete phenomena, and especially the phenomena of interest. An abstraction cannot spin yarn or yield interest. He takes a vast amount of trouble to make it plausible that his true capital is not an abstraction, is "a material entity." This proposition he develops with constant variations of language, which make upon me the impression that they are as full of inconsistencies as of obscure mystical rhetoric. Were it not for the exigencies of space, I should quote in full four or five pages (116-121) of his book. I must content myself with some characteristic specimens.

At the very outset we find it expressly stated that capital has a "material existence," that it is always "concrete and material." It "consists" of concrete and material instruments of production. These propositions seem undeniable, but one wonders that they should be adduced in support of a conception of capital as something different from concrete and material instruments of production.

On the next page a bridge between these two opposite notions is built in expressions, already familiar to us, which distinguish the permanence of capital as its "most distinctive attribute" from the perishableness of capital goods. And, then, on the difference between "concrete" and "abstract" we find the following. A business man is put before us, who regards his capital as "embodied" in merchandise, fixtures, claims against customers. "A value, an abstract quantum of productive wealth, a permanent fund—that is what the hundred thousand dollars in our illustration really signify. A value, a quantum of wealth, or a fund—if one of these be thought of apart from the concrete things that embody it, it is an abstraction; but if it be thought of as actually embodied in concrete things, it is not an abstraction, but a material entity. . . . He [the business man] knows that his investment is concrete and material; and yet he instinctively thinks and speaks of it through the medium of an abstract expression."¹

Professor Clark warns "carefully . . . against the idea that . . . capital ever lives in a disembodied state."² He speaks of the frequent use of abstract formulæ in every sphere of thought for describing a *concrete thing*.³ He now relinquishes his former expression, "pure capital," because the word "pure" "suggests freedom from some admixture, and the admixture that is excluded is a combination with concrete objects, such as tools, etc."; and he goes on: "Yet it was not at all my intention to convey the idea that pure capital is something that can objectively exist without being in such a combination. It is, however, thought

¹ *Distribution of Wealth*, p. 119.

² *Ibid.*, p. 119; again p. 259: "The capital of society has no existence till it is in the shapes in which entrepreneurs use it. Till it is raw materials and tools for the manufacturer, merchandise for the retailer, vehicles for the carrier, etc., capital has no existence at all."

³ *Ibid.*, p. 121.

of in ways in which, in the concept itself, it has to be freed from the combination. 'It lasts,' as we say, and 'it moves from industry to industry'; but the tools do not last, and they do not change their places as working implements. The fund, the 'dollars,' or the pure capital does these things. When one set of bodies perishes and another one replaces it, we say that capital continues, *and yet it is only an abstraction that has literally a continuous existence.* The concrete embodiments of the abstraction have only transient existences. With this understanding, pure capital might be termed capital in the abstract, though it is never objectively an abstraction."¹

Let the unprejudiced reader judge for himself. What glaring contradiction is there, between saying that abiding true capital is "concrete and material," is a "concrete thing," "not an abstraction, but a material entity," and the final admission in so many words that "yet it is only an abstraction that has literally a continuous existence," and that perishable capital goods are embodiments of the abstraction? What a quantity of flowery expressions, of new words and new figures, which repeatedly try to build the bridge between the abstract and the concrete; and how, through all these efforts, we see clearly that this bridge consists of no more substantial material than words and figures! It is obvious that capital goods, although they are supposed to be distinct from pure capital, are put forward and must be put forward in order to give any actual point of connection with anything concrete and material. Then the facts are thrust into the background, and in the foreground we have these forms of speech and thought, which try to secure for the pretender the recognition which has been granted to capital goods. Instead of anything in the nature of proof we are to accept as evidence what a business man "thinks and speaks," or that

¹ *Distribution of Wealth*, p. 120, in the note. The Italics are mine.

"it lasts, as we say," or "we say that capital continues." The obvious objection that there is nothing concrete and material in capital apart from capital goods is evaded by the admission that true capital never exists independently, but only through its incorporation in concrete capital goods. The use of dialectics is here so reckless that it seems to me to turn into an involuntary disproof. Professor Clark, actually in support of his own reasoning, suggests to his readers that they shall convert the abstraction which we have in his fund of value into a "material entity," by giving it in their own thoughts this materialization. Is it to be seriously supposed that this need of having the concrete capital goods in our thought is any sort of proof that anything else than these concrete capital goods constitutes a concrete and material entity? On the contrary, is not this a palpable proof that these capital goods constitute the only concrete thing? Does not Professor Clark see that with this same dialectic recipe the most undoubted abstractions, as "virtue" or the conception of "goodness," can be converted into concrete things? The materialization of these abstractions can be brought about in thought by reference to concrete virtuous persons. On the only occasion on which Professor Clark appeals to facts and soberly inquires what really has a continuous existence, he has to admit that "it is only an abstraction that has literally a continuous existence"!

"To be or not to be." Does it exist or does it not exist? That is the question. The facts seem to me very simple. In reality, concrete capital goods, and capital goods ever shifting, are the only things that exist with a capacity to effect something. By way of abstraction, we have deduced from these the conception of capital. That conception does not work or produce, just as the conception of a hammer does not drive a nail. If we ascribe to capital any real

effect in production, we mean always the concrete capital goods. Professor Clark tries to intercalate a third notion between the abstract conception of capital and the concrete capital goods, and ascribes to this third thing a real existence as a material entity; which is simply an error. There is no such third thing. It has only a dialectic existence in our ways of speech. Language treats the concrete and the abstract in the same terms, and in this case is used to bedeck a phantom with the verbal attributes of existence.

The object of science is to disengage from their often deceptive externals the real kernel of facts. Such a phantom as Professor Clark's brings to science no gain, but only loss and confusion. Professor Clark is mistaken in thinking that his creation can guard him or economic science from any error or can bring any aid. For example, he maintains that the older economists, in their reasoning about the relation of wages to capital and the question whether the subsistence of laborers was part of capital, were led into error through the lack of his conception of capital. I, for my part, hope I have kept free from these errors, even tho I made no use of his conception of capital. The advance in the scientific treatment of these topics seems to me to rest upon an entirely different distinction, and one which Professor Clark does not develop; namely, the distinction between producers' and consumers' capital.¹

Professor Clark repeatedly maintains that there are propositions which are tenable with reference to capital, but which are not tenable with reference to capital goods. Here there are only two possibilities. Either we have simply verbal expressions, rhetorical forms, which can be applied literally to "capital" only, but not to "capital goods," although with some variation in phraseology the propositions can be applied to both. In this case there

¹ So far as I can see, Professor Clark has in mind only producers' capital. I suspect he would find himself in difficulties if he had to explain, for example, the net income which a banker draws from his villa when he happens to let it.

may possibly be some gain in style, some attractive form of speech, but certainly no enriching of our understanding of the facts. Or, on the other hand, the propositions which have been laid down as to "capital" cannot be applied to "capital-goods," either literally or with any possible variation of phraseology. Their content in thought cannot be verified as to "capital goods." There they are certainly false, and lead not to better understanding, but simply to error.¹

In the first class, of harmless turns of phrase, belongs the proposition as to the permanence of capital. "Capital," on pain of disaster, "may never cease to be." The language here used cannot be transferred without a distortion of its meaning from "capital" to "capital-goods," just as such an expression as that "the fleet was split into three parts by the attack of the enemy" cannot be literally applied to the individual ships. The same thought can be expressed in language which avoids all figures of speech by saying, "The ships which previously constituted a single fleet were split by the enemy's attack into three groups." So in the case of capital it might be said, "In order that the community shall not suffer, the whole value of the capital-goods, which are constantly changing, must remain undiminished." I am unable to see that an investigator who keeps this actual state of things constantly before his mind, and bases conclusions on it, suffers any disadvantage as compared with another who applies to the same facts the phrases about "permanent capital."

The question may be raised how far an investigator is permitted to carry the use of this and similar figures of speech. I would not preach asceticism in style, or be so pedantic as to condemn every mode of expression which departs from a literal statement of facts. I do not myself hesitate to use figures of speech. Harm ensues only if the

¹ See, for example, *Distribution of Wealth*, p. 121, note.

investigator allows himself to be misled by such metaphors, and, instead of keeping in view steadily the actual facts, puts before his eyes something which is only a creation of speech.

Let us now take an example of the second and dangerous consequence of Professor Clark's mode of dealing with the subject. Such appears, it seems to me, in the proposition stated on page 118 and again repeated on page 258, that "capital is perfectly mobile," "absolutely mobile," while capital goods are not.

Professor Clark maintains that "it is possible to take one million dollars out of one industry and put them into another," but that this is quite impossible as to capital-goods. The instruments used in a whale fishery cannot be transferred to cotton manufacturing. Thence Professor Clark deduces a proposition that capital as distinguished from capital goods is perfectly mobile—a proposition which, like that on the permanence of true capital, serves to disprove the identity of capital and capital goods.

But Professor Clark cannot really believe that such a change can take place on an unlimited scale, that a thousand million dollars can change occupation as easily as a million dollars; that there can be a transmigration of all the capital of the United States into different industries, its transfer into other "material bodies." If not, how maintain that "perfect," "absolute" mobility which Professor Clark ascribes to true capital?

We grasp the truth readily, if we set aside resounding phrases and look soberly at the facts. In regard to these I am quite in accord with Professor Clark as he describes them in various passages (for instance, p. 341). In fact, not unfrequently Professor Clark gives two versions of the same phenomena, one in simple terms quite in accord with the facts, and the other in artificial expressions which refer everything to that favorite creature of his imagination,

true permanent capital. It is certain that there are comparatively few instruments of production (Professor Clark mentions land as one of them) which can change their mode of use without actual loss. In most cases such a change can take place only with considerable loss, with some diminution in efficiency, or with some expense for remodelling. If for any reason it becomes desirable to diminish the capital used in any one branch of production and to increase the capital used in another, the change takes place only in slight degree by the actual transfer of concrete capital goods. Ordinarily it takes place through the wearing out of those capital goods which it is desired to diminish in quantity, and the creation in their place, not of the same instruments, but of others of a different kind. In every industry there are many forms of capital goods which wear out quickly and have to be constantly renewed. Hence, as a rule, it is possible to effect transfers of this kind quickly and without great loss. The existence of durable instruments, which wear out but slowly, may cause long delay in the process.¹

Such are the facts on which both of us have agreed. Now I ask, How are we to conceive these facts, if the phrases about the perfect and absolute mobility of true capital are not empty words, but scientific truth? Perfect mobility is supposed to be a universal characteristic of true capital, belonging to it irrespective of capital goods in which the true capital is embodied. In contrast to the incomplete mobility of capital-goods, this mobility of capital is supposed to be absolute and complete. Can this mean anything else than that true capital can betake itself with absolute ease and freedom to another form and another use?²

¹ *Distribution of Wealth*, pp. 341, 342; also 278.

² "The goods that embody the capital are as fettered in their movements as the capital itself is free" (p. 257).

But would Professor Clark maintain that there is any fact of this sort? Does not every fact which he adduces indicate precisely the opposite; namely, that the transfer and transformation of capital in fact takes place not without limit or without conditions? Secondly, is not the extent and rapidity of this change dependent upon the concrete nature of the capital-goods? The change takes place rapidly and easily, if the capital goods are easily susceptible of use in a different occupation,—coal, for example, or pig iron,—or if they are such as wear out rapidly. And the change takes place slowly, perhaps not at all, if the capital-goods are of a kind which cannot be used for another purpose, or are so durable that their replacement is necessarily spread over a long period. The whole subject of the transfer of capital must be studied with reference to capital-goods.

The fact that a later generation of capital goods consists of other constituents, and perhaps is differently apportioned among the various branches of the industry, may be expressed in a figure of speech, and with a sort of personification, by saying that capital, which is movable, has changed its form and its mode of use. To such a statement I have nothing to object, so long as it is clearly borne in mind that it is nothing more than a figure of speech. But it is not to be supposed that the understanding of the actual situation is thereby promoted, still less that anything is understood which before was not understood. And when this figure of speech is finally carried to the point where it no longer conforms to reality, then there is simply a mistake in fact: Clark's perfect and absolute mobility is, to put it plainly, perfectly and absolutely false.

Professor Clark has saved himself, in the course of his own exposition, from obvious inconsistency with the facts, because he has been careful not to take his words too

literally. As has already been observed, he develops a second and very sober treatment of this same subject of capital goods, and steadily uses only such examples and arguments as fit this second realistic treatment. He adduces as an example of the perfect mobility of capital, the transfer of a million dollars from one branch of industry to another. The example does not suggest anything impossible, because in an economic organization as huge as that of the United States it is quite possible that concrete capital goods of this value, even to a much greater value, fulfil the conditions for easy transfer and easy replacement. But, if the sum mentioned were a thousand or ten thousand times as great, the example would have shown clearly the impossibility of the change assumed, and Professor Clark has been careful not to select such an example. And wherever he makes a practical application of his proposition, he never fails to say with much emphasis that the process of transferring "true capital" does not take place in the smooth and rapid manner which would result from absolute and perfect mobility, but with those obstacles and delays which result from the material constitution of concrete capital goods.¹ And where by way of exception he suggests, tho without absolutely stating it, a sudden and frictionless transformation, he invokes the hypothesis of "magic."² Here Clark, the shrewd observer of facts, has exercised a friendly control over Clark, the imaginative artist in words, and has prevented him, if not from expressing error, at least from drawing erroneous practical conclusions. Unfortunately, as will appear in the sequel, the empirical Clark has not always exercised this same degree of watchfulness.

Another of those glittering antitheses to which Professor Clark has given too much place in the development of his scientific conclusions, sets forth that capital goods

¹ *Distribution of Wealth*, p. 278.

² *Ibid.*, p. 251.

"ripen" into consumable goods and have to do with phases of development and periods of production. True capital has no such characteristics. "Capital . . . has no periods. . . . Capital, as such, does not originate, mature and then exhaust itself. . . . No permanent capital ever ripens and begins to minister to direct wants: immaturity is of the nature of capital."¹

This antithesis has the same character, and as much and no more value in explaining the facts as others of the same sort; for instance, that individual caterpillars go through phases of development and eventually become butterflies, but that the caterpillar "as such" never becomes a butterfly; or that children become men, but that "childhood as such" never becomes "old age." If the object here is only to state in an effective figure of speech the commonplace fact that capital goods ripen into consumable goods, and caterpillars become butterflies, but that these things do not pass out of the earlier stage into the later so long as they belong to the class of capital goods or the species of caterpillars—that capital never includes the consumable goods, and that caterpillars never include butterflies—then there is no objection to the phraseology. But surely no one can believe that it leads to any new understanding of the phenomena. If, however, such antitheses mean more, if they are supposed to bring new important information about a second set of things with different powers and different qualities, to show that things happen with "true capital" or with "capital as such" which are realities and which are different from the things which happen to the concrete things or the living caterpillars, then they are simply deceptive. What would the biologists say if a colleague of Professor Clark were to maintain that in addition to the concrete caterpillars, which ripen into butterflies, there is in nature something

¹ *Distribution of Wealth*, p. 128.

else which never gets beyond the stage of unripeness, of caterpillarness, which has no phases, and which, nevertheless, leads to the eventual appearance of the butterflies; and if such an innovating biologist were to maintain that the biological conditions of the lepidoptera could be understood only by referring them to a permanent and non-developing entity which always had the qualities of caterpillar, but never was really caterpillar and never became a butterfly?

I fear that Professor Clark falls into error no less grave when he maintains that there are actual happenings in the production of commodities, in which capital plays its part, but in which the interval between production and consumption is done away with, and in which labor and its fruits are "synchronized." But here I touch on a matter which cannot be briefly disposed of. I do no more than touch on it, because it belongs not to this preliminary discussion of the question whether Professor Clark's conception of capital is or is not a happy scientific device, but to the more essential question to which I shall next turn; namely, whether Professor Clark has given an explanation of interest which is in substance satisfactory. To this problem I shall turn in the following paper.

E. BÖHM-BAWERK.

VIENNA.



Volume 2

CAPITAL AND INTEREST ONCE MORE:

II. A RELAPSE TO THE PRODUCTIVITY THEORY

BY

E. BÖHM-BAWERK

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I.

PROFESSOR CLARK develops an explanation of interest which seems to me to turn once more into the paths of a genuine theory of productivity; that is, a theory which finds the effective and adequate explanation of interest in a productive power belonging to capital as such. Professor Seager seems to me to have followed him.¹ I say "it seems to me so," for both clearly express themselves in this way; yet both give intimations of another mode of looking at the subject, to which in due time I shall give attention.

The main elements of the explanation which Professor Clark gives of the origin of interest seem to me to be the following.

The generic feature of his theory of distribution is the proposition that in a static state of society, in which all values, wages and interest attain their normal level, each factor or agent of production brings to its owner as much income as it has turned out in way of product. "Products and shares coincide."

The productive agents, according to Clark, are three,—

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labor, capital (with which Clark classes land also), and the function of the entrepreneur, which branches off from labor. Corresponding to these three agents are wages, interest, and profit. And the general proposition stated in the preceding paragraph takes this more concrete form: "Free competition tends to give to labor what labor creates, to *capitalists what capital creates*, and to entrepreneurs what the co-ordinating function creates."¹

These agents usually co-operate in production towards a joint result. But this does not prevent us from marking off the contribution which each separately makes. The study of distribution resolves itself into an analysis of this problem; that is, into a study of "specific production." "It is an analysis of the wealth-creating operation, and a tracing to each of the three agencies that together bring wealth into existence, of the part which it separately contributes to the joint result."² As an instrument for this analysis, the theory of imputation serves,—a theory which Professor Clark handles on the same principles which the Austrian economists have followed on similar subjects.³ The drift of it is that we must ascertain how much of the product would be lost, or how much would be gained, according as the factor in question, or one unit of such factor, is absent or present.⁴ I will not enter on any prolonged exposition of this topic, since it is familiar to every one conversant with modern economic theory, and since I am in entire accord on it with Professor Clark. It leads to the conclusion that the increase in product due to the last unit of any factor in produc-

¹ Page 3.

² *Ibid.*

³ Professor Clark uses the expression economic causation (p. 323). Sometimes he speaks of the shares which are "attributable" or "imputable" to each agent, "can be traced" or "are due" to it.

⁴ For instance, (p. 178), "The effective value of any unit of labor is always what the whole society with all its capital produces, minus what it would produce if that unit were to be taken away."

tion—the final increment—is the measure of what is to be ascribed to each unit. Specific productivity is final productivity.

This general theory of imputation Professor Clark applies to capital. It is characteristic that he believes it possible, on this principle alone, to solve the problem of capital directly and exhaustively, without recourse to any notions about abstinence¹ or any other theories, such as mine on the influence of the varying length of the productive period. The single premise that capital is productive, and is limited in amount, suffices to give a direct and complete explanation of the fact that capital yields a net return of a specific amount which accrues to its owner as interest. In all this I find the characteristic traits of a true theory of productivity.²

This theory seems to me to fail at the same point and on the same grounds as others of the same sort. It makes a logical slip in order to find in the productivity of capital the cause of true interest. It operates with sound principles of imputation; but at the critical point it passes by, in silence, one link in the theory of imputation, and precisely that link at which the real problem of interest emerges and ought to be solved.

¹ I shall say something later of the not entirely consistent position of Professor Clark on this subject of abstinence. See p. 275.

² On this point I am in accord with Professor Seager, who expressly entitles Professor Clark's theory and his own a productivity theory. I take it I am also in accord with Professor Clark himself, who refers to the close resemblance of his own theory to Thünen's theory of productivity (see p. 321, ff. note). For myself, I think it has closer resemblance to Wieser's theory, which also belongs to the productivity group. I still believe that the productivity and abstinence theories are different, and therein differ with Professor Cassel, who is disposed to obliterate the boundaries between the two. Whoever follows clearly and consistently the reasoning of these theories—which Professor Cassel, to be sure, does not seem to do—will hardly find it possible to regard them as belonging together as two forms of the same train of thought, or as indicating the play of demand and supply on the same phenomenon. On the contrary, he will soon reach a point where the further prosecution of the one principle excludes the consideration of the other.

II.

It is not easy to select from the remarkably homogeneous fabric of Clark's theory of distribution separate passages as those most significant of his mode of reasoning. I believe, however, that I may refer to two, which are developed as two parts of Chapter XII., entitled "Final Productivity the Regulator of both Wages and Interest." In the first part, the principle of imputation is used negatively to prove that the whole product which arises from the co-operation of labor and capital is not to be ascribed to labor or to accrue to the laborer as wages. In the second, it is used positively to show that capital gets a net yield, which is the fruit of its final productivity.

The negative proof had already been intimated in earlier passages in the book. Professor Clark there pointed to the all-important distinction between the whole product of industry and the whole product of labor. It is clear, he says, that "the whole product of *industry* does not go to the worker." For "industry involves the co-operation of labor and capital." The men who furnish lands, tools, building materials, receive a share of the entire joint product of labor and capital. As the whole product of labor we are to understand the part of this total that is attributable to labor itself. It is not only possible, but under complete competition it is certain that this part will go to the laborer as wages.¹

It is superfluous to inquire whether Professor Clark, in these preliminary remarks, wishes merely to bring his proposition to the reader's notice or whether he believes he is adding something towards its proof. For in any case he has undertaken the proof of the proposition in much clearer terms and with an effort at mathematical exactness, in another place, the first half of Chapter XII.

¹ Pages 82, 83.

Here Professor Clark assumes that in an isolated society there are one thousand laborers, and that at their disposal stand "a hundred million dollars' worth of capital" (let the reader note the precise words). He sets forth (and we should all agree with him) that in consequence of the "rich environment that these conditions afford"—they mean a capital of \$100,000 per head—the product of these thousand laborers per capita will be enormous. Every laborer will have at his command, in extravagant amount, the best and most effective materials and machines. Suppose now an additional thousand laborers, capital remaining the same. Each laborer will now have at his command a capital of \$50,000 instead of \$100,000. This capital will have to take the form of instruments which are on the average cheaper and less effective than those which represent a capital of \$100,000 per head. Consequently, the output per man will be less than before. So far still we are completely in agreement with Professor Clark.

He proceeds then to an observation equally acute and pertinent, and again to be fully agreed to. How much of the product, he asks, is to be ascribed to this second thousand laborers? The whole of the lessened output per man, or everything which "this increment creates by the aid of the capital that the earlier division of workers has surrendered to it"? Certainly not. Only so much as "its presence adds to the product previously created." And here it must be remembered that because of its presence a "minus quantity" arises. The presence of the second thousand of laborers having diminished the endowment of capital from \$100,000 to \$50,000 per head, the first thousand laborers now operate with less aid from capital, and therefore with a lessened output. And this diminution in output must be made good out of the increased output of the whole two thousand before we

can ascertain the amount which the presence of the second thousand adds. The amount really due to the additional laborers is, therefore, less than the product which the second thousand turn out with the aid of capital. In other words, we impute to the second thousand less than the total product which they turn out with the aid of capital. But on the principle of final productivity, the increment due to the last unit determines how much is to be ascribed to each unit. It follows that the whole of the product turned out by laborers with the aid of capital is not ascribable to the laborers alone. Professor Clark illustrates this train of thought with a diagram which I may assume to be familiar to the readers of this Journal.¹ I now ask whether all this reasoning, in which each step has my complete approval, really serves to prove that which it is meant to prove; namely, that the whole product of labor and capital is not to be ascribed to labor alone.

I answer, no. So far as the reasoning concerns the relation of labor to what Clark calls artificial capital (that is, to intermediate products which arise from previous labor), it overlooks the main element of the problem and owes its plausibility to an ambiguity arising from that ominous notion of "true capital." The germ of this ambiguity appears in the very first words in Professor Clark's example. He says "give to this isolated community a hundred million dollars' worth of capital." This expression is obviously, and probably intentionally, derived from the vocabulary which Professor Clark uses for his true capital. But what actual state of affairs does he assume? What persons and what concrete factors in production does this isolated community contain? Does he wish to assume that, in addition to the first or second thousand of laborers, this community already possesses some available capital goods in the form of buildings, materials,

¹ Page 182 and the passage in the text beginning at the bottom of p. 181.

tools of the value of one hundred million dollars, such as, of course, must have been produced by previous labor?

If this be the actual state of affairs, then we need not retract by one iota our acceptance of the several items in Clark's reasoning. But then it is also clear that the legitimate conclusion from these several items signifies nothing for the proposition which Clark derives from them. The output from this combination of productive factors is a gross product arising from the co-operation of current labor and of capital goods made by previous labor. It is clear as noonday that this gross product is not to be ascribed to current labor alone. The fish caught by a fisherman with the aid of boat, tackle, and nets, is not produced by the fisherman alone. Something is to be ascribed to the co-operating capital goods. But it is not less clear that, when we separate the product of past and of previous labor, we do not in the least touch the real problem as to the shares of labor and capital. That problem begins to arise when we inquire further as to that peculiar element which appears in the very first partition between the fisherman and the capital goods which he uses. Here already we have to ask how much is to be ascribed to the labor of those whose previous exertions brought into existence the boat, the tackle, and the net. Obviously, the catch of fish is partly due to their labor. It is clear, moreover, that their claim arises from the consequences which ensue from the presence or co-operation of the capital goods which they produce. Finally, there is the crucial question whether the share in the product ascribed approximately to the presence of capital goods completely exhausts their claim, whether or no the entire contribution which results from the presence of a capital good is to be regarded as the product of the previous labor which has created that good.

This crucial problem Clark's reasoning does not touch

or even approach. If he regards the endowment of capital at the disposal of the first or second thousand of laborers as consisting of completed capital goods, produced by previous labor, then the total output consists in part of the fruit of this earlier capital-making labor. In order to state the case in such way as to make it plain that the whole product was not ascribable to labor, the output should not have been compared with a part only of the labor concerned. Professor Clark should have inquired as to the whole of the labor, including that which made the capital. After ascertaining what was ascribable to this previous labor, he should have inquired whether the rest of the output coincided with the product of current labor. This important question is passed by, and the conclusion is a simple *non sequitur*. It is inadmissible to conduct the suit against current labor only, whose claims to the total output can be refuted with ease, and then to deliver judgment against previous labor also, whose weighty claims have not been considered at all.¹

There is, however, another way of interpreting Professor Clark. Perhaps he holds to his distinction between true capital and capital goods, and would say that his assumption of "a hundred million dollars' worth of capital" does not mean the existence of capital goods having this value. Then I must ask, What in the world does it mean? Are we to assume that the thousand laborers are on hand, and not to assume that there are also materials and tools, already produced? What, then, is the tangible meaning

¹ I will not accuse Professor Clark of having entirely overlooked the necessity of distinguishing what part of the gross product is due to previous labor. But he makes it quite impossible for us to judge whether he has considered it at all, still more whether he has considered it sufficiently. Taking his language literally, one does not see that he has paid any attention whatever to this point. If he has really had it in mind, it has been in a manner not subject to our control. It would be superfluous to criticise in advance every conceivable interpretation of Professor Clark's meaning, when it is so inadequately expressed. I content myself with pointing out that the steps in his reasoning which he has developed with clearness permit no legitimate conclusion in favor of the proposition which he has laid down. Compare what follows in the text, and the note, p. 256.

of the phrase, "give to this isolated community a hundred million dollars' worth of capital"? I will make no guess as to what Professor Clark may then have meant. I should find it difficult to make a guess, and in any case believe it to be useless to trouble the reader with discussions of assumptions and explanations, as to which Professor Clark might say in the next number of this *Journal* that they were not at all his own.¹

I content myself with pointing out that a supply of true capital, which is not a supply of available capital goods, is pure necromancy. I fear very much that here and elsewhere, at decisive points, the Clarkian logic rests upon no more stable foundation than a quibble as to the magical qualities of true capital. He loves to sow with capital goods and to reap for true capital. Capital, as he operates with it, has a Janus face. When the question is, what does an endowment of capital produce? we have the familiar features of capital goods,—machines, tools, buildings. Their presence, unquestionably, causes the output to be greater by an amount which is not to be ascribed to the current labor which uses these capital goods. But when the question arises, to whom is this part of the output, not the result of current labor, to be ascribed? we are no longer shown these labor-made capital goods. The method of imputation is not invoked to show how much of the total output is due to capital goods, whether the whole or part. Clark's diagram has no line which indicates the product or portion of product due to capital goods, nor a line which indicates the previous labor that created these capital goods. At this point in his demonstration the other side of the Janus head only is to be seen.

¹ It is not to be forgotten that Professor Clark has said repeatedly, and with emphasis, that his true capital exists only so long as it is incorporated in capital goods, and has taken the form of materials, tools, merchandise, and the like. See his book, pp. 119, 259, and compare my previous paper in this *Journal* for November, 1906, pp. 11, 12.

Besides the current labor of the first or second thousand workmen, the only thing that is visible is an endowment of "true capital," which is not to be confounded (Heaven forbid!) with concrete capital goods. Any share not ascribable to current labor is then ascribed, once and for all, to true capital as the only other factor present. Then it is supposed to follow that it is ascribable to no kind of labor. The previous labor which produced the capital goods has disappeared with the capital goods, thus leaving no trace behind. "True capital," which alone remains in sight, suggests no question as to previous labor.

Thus Professor Clark deceives himself and us with semi-mathematical reasoning and carefully drawn diagrams, and lays down a conclusion which he has never really proved, and whose basis he has withdrawn from our scrutiny through a dialectic ambiguity. The assumptions as to the cause and size of the output are so stated that they suppose the existence of capital goods, and therefore imply previous labor that has made these capital goods. The assumptions as to the imputation of the output are so stated that capital goods and previous labor are ruled out. In the output there are fruits to which previous labor has claims, and the examination of those claims is the central point of the whole problem of labor and capital. In Professor Clark's exposition these claims are set aside under the pretext that, beside current labor, there is nothing but true capital.¹

Incidentally, it may be remarked that this fallacy in

¹ I state my criticism in somewhat general terms, because Professor Clark does not accurately specify what he means by output. It does not appear whether that which Professor Clark puts before us as output includes the whole yield of the co-operating capital goods or only a part of that yield, with possible deductions or some sort of precise reckoning. It is certain, however, that the output contains at least *some* things to which current labor has no claim. The question arises as to what claim previous labor may have, and that question is left untouched by Professor Clark. This logical error remains in essentials the same, whether it is committed with reference to the whole of the unexamined portion or, as is more probable, with reference to only a part of it.

Professor Clark's reasoning has nothing to do with another train of reasoning, which bears on an entirely different aspect of the question and which Professor Clark presents satisfactorily. That is the question whether, in consequence of the law of diminishing returns on land, the co-operation of labor with natural powers assumes some degree of scarcity in the latter; in which case the whole product is not to be ascribed to labor alone.¹ Since land and natural agents are not produced by labor, the crucial question cannot here arise as to the share of previous labor. That question can arise only with what Clark calls "artificial capital." Professor Clark applies the term "capital" to land also. But this, of course, does not justify him in applying conclusions which are valid as regards land to other goods (instruments made by man) as to which the fundamental conditions are different. This fundamental difference seems to me a strong ground for distinguishing in our terminology between land and intermediate products.²

III.

Let us turn now to the second, positive part of the reasoning. Shall we find here a different and more successful analysis of the great problem?

Professor Clark, in developing the "law of interest," uses the same diagram which he before used as to wages, only he now gives his graphic symbols the reverse meaning: "Let the labor," he says, "be the element that is unchanged in amount, and let capital be the one that is supplied in a succession of increments. AB is now the product gained by using one increment of capital in con-

¹ See p. 163.

² My views as to the differences between natural agents and capital I have stated in my *Capital and Interest*, p. 340, ff., English edition, and in my *Positive Theory of Capital*, pp. 95, 354, ff., English edition.

nection with the whole working force. $A' B'$ is the additional product that is created by a second increment of capital. $A'' B''$ is the product of the third increment, and DC is the amount produced by the last. This amount, DC, fixes the rate of interest. No one of the series of units of capital can secure for its owner more than the last one produces. If the owner of the first increment asks more than this for the use of it, the entrepreneur will relinquish this bit of capital and will put the last unit in its place. What he will lose, in the way of product, is measured by the amount DC, the direct product of the final increment of capital. This expresses the effective product of every increment, since it is the amount that would be lost if any one of the series were withdrawn."¹

In this exposition the reader will note a circumstance which is not explicitly stated, but is none the less clearly implied. That product which arises from an additional increment of capital and is ascribable to it is not what is elsewhere² called the gross product, but is only that portion by which the gross product exceeds what is necessary to replace the capital used up. In other words, it is what Clark calls "net product." This is clearly to be inferred from the fact that in his diagram Clark regards as identical amounts the product of the last increment of capital and that which this increment receives in the way of interest,—i.e., net income,—a conception which appears in express terms in many other passages.³ The remainder of what is produced thru the co-operation of capital goods, such as instruments and materials, is not explicitly accounted for, either in the text or in the diagram.⁴ We must infer that Professor Clark tacitly

¹ Page 182.

² See pp. 270, 271. But on p. 347 this expression is used in a different sense.

³ Page 202, for example.

⁴ That Professor Clark disregards separate entrepreneurs' profits is doubtless due to his assumption that, in a static state, "normal" (cost) prices are net profit prices.

credits this remainder to labor; for the whole product is apportioned once for all between labor and capital.¹

An attentive consideration will show that this mode of treating the subject still throws not a particle of light on the real problem of interest. To solve that problem, it must be shown why there is a net product ascribable to capital. Net product is, so to speak, a distillate. To explain a distillate, the process of distillation must be explained. But Professor Clark gives his explanation by assuming the existence of the final distillate. On the one hand, he assumes the appearance of successive increments of capital goods. By some process of distillation, which is not explained to us, these are already free from all admixture of the previous labor which unquestionably is incorporated in real capital goods. On the other hand, he assumes the appearance of successive yields, which again are clear net income, completely free from that wear and tear which is an inseparable consequence of the use of real capital goods. He might be expected to use the method of imputation in order to explain the existence of any net income, i.e. any excess of the total product arising from the co-operation of productive instruments over and above the inevitable wear and tear. In fact, he entirely conceals from view his mode of reasoning. What he presents is the pure assumption that every increment of distilled true capital somehow brings an increment of distilled net income, a product over and above the wear and tear. This assumption being made, it only remains to consider which of several possible net incomes is to be regarded as the last, and so ascribable to any one increment of true capital. Hence, in the diagram the line $A' B'$ determines interest if there are only two units of capital,

¹ This appears unmistakably in the diagram on p. 201, and in such expressions as this on p. 200: "AEDC will be the total amount of interest, and EBC will be a surplus; but it will be a surplus that is causally attributable to labor, and to labor only."

the line CE if there are six units of capital. The crucial question is whether there is any net income at all, anything in the nature of a marginal addition to product, ascribable to capital; and that question is already disposed of in the assumption. In the same manner one might infer from the circumstance that white balls are drawn out of an urn the conclusion that none other than white balls had been put into it.

The fact is that Professor Clark assumes, at the outset, a net yield of capital, and so fails to consider the question which is decisive as to the origin of capital. Suppose a capital of \$1,000,000, consisting of a factory and raw materials, and suppose a staff of workmen employed in connection with it. Unquestionably, this capital has to do not only with that portion of product (say \$40,000) which the owner gets in the way of interest, but with the further product of \$1,000,000 which sooner or later goes to the owner to compensate him for the consumption of raw materials and the eventual wearing out of the plant. Suppose this capital suddenly destroyed. It is certain that there would be a loss, not only of the annual interest of \$40,000, but of the further sum of \$1,000,000, which otherwise would have been produced and would offset the wearing out of the capital goods. It follows that, on the very principles of imputation set up by Professor Clark, the whole gross product is to be ascribed to the capital goods. He himself repeatedly says that normally every instrument "creates" and "earns" a product large enough to replace itself and in addition to yield a dividend to the owner. Then the whole gross product which is "created" or "harvested" by such instruments must be ascribed to them. The second question next arises, why this gross yield should contain anything over and above the value of the capital goods consumed or destroyed. Let the process of imputation be carried further, and applied to

each and every fundamental factor; and consider whether in the end there will be a net product to be imputed specifically to capital. It need not be said that this second question presents the real problem of interest, the really difficult and disputable problem. This problem is, so to speak, the defile thru which every one must pass who undertakes to follow interest to its source.

On the other hand, we must ask, how can there be a gap between the value of that capital itself and the value of the product imputed to it, if the gross yield of capital goods is ascribed to them as *their* product? As we have seen, Professor Clark intimates that the "effective value" of a unit of labor is that which is to be ascribed to it as product.¹ The same principle must be followed for the other factors of production, capital goods included.² Suppose, now, there is ascribed to a group of capital goods, which "creates" a specific product and is worn out in the course of this creation, precisely as much in value as the created product amounts to in value. In that case would not the replacement of the capital, its wear and tear, exhaust the imputed gross product, and leave no net product and no interest? This is the difficulty which productivity theories must face, and which I will not explain more in detail, since I have already done so elsewhere. Essentially, it is the same point to which Professor Fetter has lately called attention in his clear and acute exposition of the same problem.³

On the other hand, a question may be asked which

¹ See pp. 270, 271, 272.

² Professor Seager expressly says in his *Introduction to Economics* (p. 95), "The value of each group of factors is derived from that of the consumable goods which it is helping to produce."

³ Fetter, *Principles of Economics*, p. 148. Fetter notes that future yields enter into the value of productive goods for a less amount than they will have as "actual" yields, and says that this is the "crucial point" in the theory of interest. He holds that the productivity theories "beg the question involved." Compare my *Capital and Interest*, Book II.

leads to the central problem of interest from another direction. If a given product is made by a group of instruments and materials, this group is not an original fact or of production, but has itself been brought into existence by labor. On the principles of imputation, must not everything which arises from a capital good be imputed to labor, as "caused" by it? This is the question which the socialists have asked of those maintaining a productivity theory.¹ That same question I have myself addressed, though not in the precise form in which the socialists put it, to those maintaining sundry current theories of interest.²

Whoever wishes to solve the problem of interest must give a distinct answer to these questions, and, first of all, he must formulate them clearly. Professor Clark simply evades them. His mode of stating and discussing the problem simply avoids the critical defile. His failure to enter it is due to that deceptive phantasm of his, permanent true capital, which is supposed to be distinguishable from capital goods.

In the course of one of those rhetorical passages to which Professor Clark is wont to turn with characteristic and in this case with suspicious serenity, he remarks that the problem of interest has to do only with true capital, and not with capital goods. Interest is said to be a percentage, a fraction of itself, yielded by capital. Now a building or a machine does not literally yield each year a twentieth (say) of itself.³ This is supposed to be sufficient ground for the conclusion that interest is yielded, not by capital

¹ The original factors of production I hold to be, not labor alone, but labor and natural forces. See my *Positive Theory*, English edition, p. 95. But for the purposes of the present discussion we may disregard natural forces if we assume that capital goods are created by labor operating with free natural forces on the margin. See my *Capital and Interest*, p. 340.

² Especially the productivity and abstinence theories. Compare my *Capital and Interest*, p. 278; also *Recent Literature on Interest*, p. 27.

³ Clark, p. 123.

goods, but only by true capital, by the permanent fund of value! Capital goods yield rent, but never "interest." To be sure, interest and rent are essentially the same income, only described in different ways, expressed in different forms. Interest, however, is the fundamental phenomenon: "fundamentally interest governs rent."¹

It is true that Professor Clark finds himself compelled to admit it as inevitable that "both capital and capital goods should be subjects of economic study," since both give rise to problems in need of solution. Again, he says that "studies of capital proper should be confirmed at every point by parallel studies of capital goods."² To be consistent, he should then have explained the problem of rent in connection with capital goods. But he does not do so. When he speaks of the facts which connect themselves with the net product from capital goods,—when he discusses gross product and net product, gross earnings and net earnings, gross rent and net rent, wear and tear, and sinking funds,³—he simply assumes the existence of such a thing as net rent. He does not endeavor to explain why there should be anything left after wear and tear had been deducted from gross rent, presumably because he conceives interest to be the fundamental phenomenon, and the explanation of this belongs to the theory of true capital.

When it comes to interest, however, which his rhetorical artifice has transferred to the theory of true capital, the essential point of the problem is passed by. The pretext for this is found in the interesting attributes which Professor Clark has imagined for permanent true capital. Whereas capital goods are necessarily worn out and destroyed, permanent abiding capital may not be normally worn out or destroyed.⁴ It operates without wear and

¹ See Clark, pp. 123-25.

² *Ibid.*, pp. 122, 334.

³ *Ibid.*, pp. 270, 335.

⁴ *Ibid.*, p. 117.

tear, without deduction from its gross yield. Hence no problem can arise of a difference between gross and net product, nor any need of elucidating the relation between the two. Whatever permanent capital creates is from the outset endowed with the property of being a completed net product. In this fashion the first of the troublesome questions which present themselves at the defile of the interest problem, and which has caused others so much concern, is quietly put aside.¹

But the second question also is evaded by this slippery creation, true capital. He who attacks the problem with reference to capital goods, and asks, "how much of the joint product which the fisherman has caught with his canoe and fishing tackle is due to the man and how much is due to his implements?" must be prepared to face the next question, "is the canoe a gift of heaven, or is it not also made by the labor of man,—of the fisherman himself or of some other man?" So put, the question resolves itself into this: "How much of the joint product is to be ascribed to the labor of the fisherman, how much to the labor of him who made the canoe, and is all of it due to labor of some sort?" "True capital" dodges this question. True capital is something different from concrete capital goods. That the canoe is made by labor cannot possibly be denied. But the true capital of the fisherman, even though it consists of these capital goods made by labor, is yet something different. No hammer or saw has worked at it. It has been produced by no laborer, and so no question can arise as to what is due to this laborer or is to be imputed to him.

Having thus provided that whatever is to be imputed to capital must be, *ipso facto*, a net product, and not to be

¹ In the direct imputation of net products I find that close resemblance between Professor Clark's theory and Professor Wieser's to which I have already referred. See Wieser's *Natural Value*, English edition, pp. 124-133. Compare also my *Recent Literature on Interest*, p. 98.]

imputed to any labor, Clark's only remaining problem is to show that something is to be ascribed to capital in production. Here, again, he resorts to the qualities with which he has endowed his true capital. That same double-faced Janus aspect is shown to us. First, as we have seen,¹ the capital goods are put before us,—tools, machines, materials, automatic implements, and electric motors. This makes it indubitable that a real product arises from their use. A moment afterwards the tangible qualities of these capital goods disappear, and the hobgoblin of true capital presents himself, and claims as his share—he being now the only claimant in addition to current labor—whatever part of the output cannot be due to this current labor.

Such are the dangerous services rendered to Professor Clark by his favorite creation. I call them dangerous, because they give him a dialectic pretext for a failure even to state the questions whose consideration is essential for the problem in hand. He satisfies himself with a mode of treatment which affects to be consistent, but which, at the decisive point, is not held together by connected reasoning or facts, but by an ambiguous phrase. The lack of consecutiveness in his logic is simply covered up by this unhappy device.

IV.

There are certain other passages, however, in Professor Clark's book which may be designed to supplement his theory of interest and which must also be considered. These are the passages in which Professor Clark ascribes to true capital, as distinct from capital goods, the function of removing time intervals, of "synchronizing" labor and its fruits. In my judgment, these are the very pas-

¹ See above, p. 255.

sages in which Professor Clark wanders most dangerously far from the truth.

Professor Clark sets forth that, in a society which has not yet supplied true capital, "labor and time are the only absolute requisites of production."¹ Indeed, labor is the only requisite.² But, when those advantages are secured which arise from roundabout methods of production, labor must first be given to making tools or capital goods. The laborer must, then, wait a certain time for the enjoyable products which are made with the aid of these capital goods. "Capital goods imply waiting for the fruits of labor."³

But the situation is different in a society which has true capital. Professor Clark designates the several phases of production by the letters A, A', A'', A''', A'''' indicating, for example, sheep in a pasture, wool, cloth, completed clothing. The reader will recall the reasoning of these passages. When once the series of successive commodities is made up, the completed commodities satisfy the wants of society, but others in the next preceding stage are steadily advancing toward completion, and the whole series is constantly kept intact.⁴

Now the outcome of this, in Professor Clark's view, is that in a society thus organized and equipped no one has to wait for the results of production. The laborer who to-day is working at the raw material, say wool, none the less receives on the same day the completed product,—a coat. "On the ranches of Montana cattle are breeding, among the forests of Pennsylvania hides are tanning, in the mills of Brockton shoes are finishing; and, if the series of goods in all stages of advancement is only kept intact, the cow-boy may have to-day the shoes that he virtually

¹ Page 308, ff.

² "The thing that is ultimately essential for production is labor" (p. 310.)

³ Page 311.

⁴ Pages 315-318 and *passim*.

creates by his efforts." All this is achieved by true capital. "It is the means of avoiding all waiting. It is the remover of time intervals—the absolute synchronizer of labor and its fruits." Professor Clark never tires of repeating this thought. "True capital keeps the men from waiting" (p. 318). It brings "the instantaneous appearance of the final fruits of every bit of labor that is put forth" (p. 311). "Time intervals do not figure." "Out of every day's labor will come in their completed shapes the consumer's goods. . . . The work and the outcoming of the goods are synchronous. This synchronization—this bringing together in time of work of every kind, and the complete ripening of its virtual product—is the function of what we have termed capital, in distinction from capital goods." "If industry were conducted on such a plan that the work that to-day begins to fashion a bit of raw material had no influence in causing a finished article at once to emerge at the other end of the line of operations, then also we should have to wait. As it is, we wait not at all. . . . Our plan of working enables the labor that is done on a raw article to cause a finished one to come into our possession."

If I understand everything which is here implied, though not expressly stated, this remarkable theory contains an important attempt to close a gap in the theory of interest. If it be sound, it explains and justifies Professor Clark's failure even to state those questions which others of us find crucial for the problem. As I have just said, Professor Clark does not touch the question why the product imputable to a given capital good is not to be ascribed to the previous labor which created that good. If so imputable, the whole product of capital would be identical with its wear and tear, and no net product of capital would remain. But according to the reasoning now under consideration no question of wear and tear can arise, nor any need of

considering the previous labor. The completed good, A''' (a coat), is declared by Clark to be the product of the labor of *to-day*. It is in no sense the product of those laborers who fashioned, months or years ago, the raw material A or of their successors who carried it thru the various phases of production. It is the product of that laborer who *to-day* is making the new material A and of those other laborers who are *to-day* working at the various phases A', A'', A'''. If it be scientific truth that the completed product A'''—the coat—is the fruit of labor exerted *to-day*, then no question of wear and tear can arise in connection with cost of production, no question as to the relation of product to previous labor, nor any of those problems which others have thought difficult in the theory of interest.¹

If it be scientific truth! But it is obviously not truth. Is the coat which the tailor delivers to me *to-day* fashioned with the co-operation of a shepherd who is *to-day* driving sheep to pasture, of a spinner who *to-day* is spinning yarn, of a weaver who *to-day* is weaving cloth on his loom? The undeniable fact is that my coat has been fashioned with the co-operation of the shepherd of a past period. He alone supplies the wool for *my* coat; so of the spinner, the weaver, and the like. Society does not enjoy, in the shape of completed coats, the product of the laborer who is now tending sheep. Society must wait as many days, months, or years as are inevitable in the processes of production which transform the raw material, wool, into the completed coat.

Professor Clark could not completely overlook that his proposition is not in accord with obvious facts. He re-

¹ I suspect this mode of presenting the problem explains Professor Clark's procedure when he endows with a capital of 100 millions his 1,000 or 2,000 laborers, (See above, p. 251.) It will be remembered that Professor Clark speaks as if these 1,000 or 2,000 laborers alone took part in production, and as if there were no previous labor connected with the 100 millions of capital.

sorts to a distinction between what is "literally" and "virtually" true. This turn of phrase appears time and again.¹ Not "literally," but "virtually," *to-day's* completed goods are to be regarded as the product of *to-day's* labor carried on in its various phases. The identity of the particular pieces is supposed to be immaterial, provided they are of the same sort. "The identity of the tree that we burn is of no consequence. . . . It is, in practice, immaterial to us whether we consume one thing or another that is exactly like it."² "Surrender of identity" is the key by which labor exerted *to-day* brings enjoyable results on this very day. And so the planting of the sapling is supposed to yield fire-wood *to-day*. Elsewhere Professor Clark illustrates this proposition by referring to a reservoir into which the water flows at one end, and turns at the other end a mill wheel; and he tells us to "forget all about the identity."³

I would point out, in the first place, that Professor Clark himself explains that we must here sacrifice a fraction of complete reality,—a fraction which, to be sure, he regards as insignificant. The situation is not exactly as Professor Clark states it. It is so only to all intents and purposes. In other words, the doctrine rests by his own confession on a fiction, it lacks something of literal truth; namely, as to the identity of the things just begun and the things completed. We shall see presently that more than this is lacking. Oddly enough, Professor Clark believes he can get at the truth more accurately by departing from it than by keeping to it literally. It is not capital goods, involving periods of production and waiting, that lead to the right understanding of capital and interest, but true capital that does this, with its power of eliminating periods

¹ Only on very rare occasions does Professor Clark expressly say that his "virtually" holds good only "in a figurative sense."

² Page 314.

³ Page 315; compare p. 132.

of production and synchronizing labor and its fruits. The edifice of truth, he thinks, must rest on a basis of fiction.

I, for my part, believe that truth can never be built up on such a basis. Science should seek to understand and set forth what really is. How can one expect to get an accurate statement of reality if one begins by retouching reality, by erasing some traits which in fact are present and putting in others which in fact are absent? Even if a given circumstance seem not material, science dare not say of a fictitious assumption, this is fact.

But even the slightest departure from fact is never quite immaterial. Tho no difference appears in the first stages, one will appear in the second or third or tenth. In the present case we need not go far. The difference appears on the very instant of submitting the Clarkian doctrine to a practical test. Suppose there is a strike among the laborers at that stage where the raw material A is produced. If it were scientific truth—literally or even virtually—that the output of finished goods A'' is due to the *contemporaneous* labor at the stages A', A'', A''', then the stoppage of work at A would at once affect the output at A'''. In fact, it would obviously do nothing of the kind. The stoppage would affect the output of finished goods only at a later period, depending upon the length of the whole period of production.¹

But I surmise at once what reply would be made. Strikes are interruptions of existing conditions. In such "dynamic" cases Professor Clark expressly admits that things are otherwise. In dynamic cases we have to do with capital goods, with periods of production and waiting.

¹ This difference appears drastically with regard to another illustration used by Clark, that of a forest with a twenty-year period of growth. It is clear as noonday that a cessation of planting would not lessen the timber-cut of the same year, but would only affect the number of trees available twenty years later. Professor Fetter remarks in his *Principles* (p. 229), distinctly in contradiction to Professor Clark, "Wage payment is a form of credit to the laborer whose labor has not yet produced the distant gratification."

The proposition as to the synchronizing effect of true capital holds good only in static conditions, where, by supposition, disturbing causes do not appear.

Everyone must feel that something is wrong in this reasoning. It is only needful to make clear just wherein it fails. It fails simply because there are never two different truths, but always one truth. What is true must be true dynamically as well as statically. On this point I may cite with satisfaction Professor Clark himself. The relation between static and dynamic theory is set forth by him in admirable passages, which I reckon among the many merits of his work. He defends the scientific value of the static hypotheses and of static results. It is true that the static state is imaginary. All concrete societies are dynamic. "Yet this does not invalidate the conclusions of a static theory; for static laws are, nevertheless, real laws." The forces which operate in a ^{static} dynamic state "still operate in the changing world of reality." "We study them separately in order that we may understand one part of what goes on in dynamic society." The difference is simply that in the latter still other forces appear. The static hypothesis differs from reality merely in that these other forces are provisionally disregarded. So far as the static forces continue to work in the dynamic world, static laws hold good. "Not one jot nor one tittle shall fall from the law of natural values, or from that of natural rates of wages, interest, and profits." "One can hardly assert too emphatically the dominance of the static forces in real and dynamic societies."¹

I accede to all this, but it leaves no place for any double truth. A static truth cannot fail under dynamic conditions or *vice versa*. Not only this, but Professor Clark's own mode of procedure illustrates the singleness of truth. Throughout his exposition of a static theory he uses the

¹ Pages 29, 31, 67, 72.

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Static

dynamic experiment as a means of discovering, proving, and verifying his static laws. His whole system rests on the principle of final utility and final productivity, and on the difference between absolute productivity and final or specific productivity. How, for example, does he prove his thesis that only the product of a final unit of labor is ascribable to the workman? He can do so only by an experimental test, by introducing a dynamic change in the static conditions. He inquires what would happen if one laborer were taken away or if another laborer were added. "What we may call," he says, "the absolute productivity of a particular man is measured by the importance of the particular work that he is doing. Let the man desert his place, leaving undone the work that he has heretofore done, and the loss that the establishment will thereby sustain measures the man's absolute productivity. What we have called a man's effective productivity is, then, measured by the loss that his employer suffers when the man departs, and when the employer rearranges his force so that the more necessary kinds of work are still done. The employer will put B into A's place, C into B's place, etc.; and the only work that goes undone is of the kind that is least necessary." This imaginary dynamic experiment he believes to prove, with justice, that even in the static state imputed product and remuneration are determined by effective productivity, and that the test of imputation is not to be found in absolute productivity. Professor Clark is fully conscious that he applies and must apply dynamic changes as means for ascertaining static truth. So much he tells his readers repeatedly (thus on pp. 178, 275, 371).

To all this, however, he shuts his eyes as soon as that favorite creation of his, true capital, appears on the scene. In general, he handles his principle of imputation by applying the test of loss or gain in output, according as a given

factor is present or absent. But here he imputes completed commodities A''' not to earlier labor, but to contemporaneous labor, altho it is obvious that the presence or absence of laborers at stage A would affect not the present output at A''' , but only a future output at A''' .

With this confusion in regard to the time at which labor of different stages brings results, we find in Clark still another confusion or deviation from the truth; namely, in regard to the quantity of product which is to be imputed to labor. If he would compare the output of finished commodities with the labor which in fact produces them, he would see that the cessation of the series of successive activities would necessarily entail the disappearance of the entire output. Consider again the sort of case assumed by Professor Clark: four stages in production, indicated by A, A', A'', A''', standing for raw material, and A''' for the consumable product. Assume, to avoid complications, that all this occurs on no-rent land and with so little use of fixed capital that this factor may be left out of account. Suppose now that at each stage just that quantity of labor ceases which was necessary for producing 100 pieces of the finished commodity A'''. Suppose, first, that the needed quota of laborers at A stop work; then, just at the moment when their raw material would have been passed on to the laborers at A', the corresponding quota at this stage drop their tools; and so on, until the laborers at A''' quit just at the moment when the nearly finished products would have been turned over to them.

In other words, precisely that labor ceases at each stage which otherwise would have taken its part in the production of 100 pieces of A'''. Now apply the test of imputation. What decline in output results from the taking away of these several stages of labor? Obviously, the cessation would cause the disappearance of the whole 100 pieces of A'''. Not 50 or 80 of A''' would fall out, but the

whole 100. For each intermediate product A or A', which is lost, a corresponding A''' is lost. The existence or non-existence of the whole 100 pieces rests on the exertion or non-exertion of the whole labor series. Therefore, the whole product A''' is to be imputed, on Professor Clark's principles, to this series. If, on the other hand, Professor Clark really holds to his thesis as to synchronizing labor and its fruits, he would have to impute to that contemporary labor which he puts in place of previous labor just so many pieces of the completed product,—other pieces, to be sure, but just as many. He would have to say that the total of contemporary labor contributes at once its due share of the finished commodities. Then he must ascribe the total output A''' to this series of laborers, and to them only. But he does nothing of the kind. As if it were a matter of course, he cuts off something from the share imputable to these laborers. Their remuneration does not exhaust the entire output. Something is left over, which he then ascribes to his "true capital" as its net product.

It is obvious that this diminution, this emergence of a return to capital, is the very heart of the problem of interest. Professor Clark does not inquire how this diminution comes to pass, as to either kind of labor series. He does not do so as to the true series, that of laborers succeeding each other in time, because of his failure to see that this is the proper series. He does not do so as to his false series, that of contemporaneous laborers, simply because here no such inquiry can possibly be made. How can you apply any test as to the contribution of a given kind of labor to a particular output,—whether it contributes the whole or a part only,—when, in fact, it adds nothing at all to that output?

Professor Clark thinks he departs from reality only in an immaterial detail. But under cover of his first depart-

ure he proceeds to a second departure which evades precisely that element of difference to which all the difficulties of the problem attach. First, he contrasts with labor not the original pieces produced, but other pieces; next he contrasts with labor not the original quantities produced, but other quantities. Here, again, I find the same fatal consequences of his conception of true capital and the mysterious powers which he has attributed for it. His magical quality of synchronizing labor and product gives him a pretext for overlooking the kernel of the problem, and for contenting himself with the shallow pretence of a solution. He assumes tacitly what he ought to explain.

V.

Professor Clark's book contains, finally, another group of expressions which may be regarded as attempts to grapple with the problem of interest. But they approach it from an entirely different direction. They do not support or supplement the other attempts, but cross them. To these I alluded in a previous passage, when I remarked that Professor Clark and Professor Seager also use, not only expressions which belong to the productivity theories, but also expressions which indicate quite a different point of view. They belong, to put it briefly, to the abstinence theory.¹

Professor Clark says, in one passage, "Some part of the output of every kind of goods is traceable to capital, and thus to the sacrifice termed abstinence."² From this it might be inferred that Professor Clark is disposed to enter upon that mode of explaining interest which we all know as the abstinence theory. But other expressions indicate that such an inference is not warranted. Thus he says

¹ See above, p. 249.

² Page 398. The italics are mine.

expressly that he does not regard it as necessary to consider abstinence an "economic merit" or to "justify interest on the ground of it"; and he adds with emphasis that "the power of capital to create product is the basis of interest."¹ Such utterances, taken by themselves, imply that Professor Clark would not use the principle of abstinence even for justifying interest, as distinguished from a theoretical explanation of its existence. But, further, he sets forth with great distinctness that he believes abstinence to have to do only with the creation of new capital and to be wholly a "dynamic phenomenon."² His theory of capital is developed as to a static state, in which there is no abstinence.³ All this seems to me to show that Professor Clark is not disposed to rest the theoretic explanation of interest as a static phenomenon on the dynamic phenomenon of abstinence. Such an interpretation of his view is confirmed by his earlier unqualified polemic against me, in which he combated my views on the ground that they regarded interest as a payment for vicarious waiting.⁴

Professor Clark's views are not made clearer to me by a passage in which he ascribes a part of the product to "the sacrifice termed abstinence," and cites with approval certain expressions of Professor Giddings. Professor Giddings seemed to me to find the cost of production of capital not in abstinence, but in the increased

¹ Pages 134, 135.

² Page 134. It deserves to be noted that Professor Clark rejects that later formulation of the abstinence theory, according to which there is supposed to be only waiting, not complete abstinence. He says in unqualified terms "Abstinence relinquishes an enjoyment *at once*" (p. 134).

³ "In the static state there is no abstinence or creation of new capital." "The static hypothesis excludes abstinence" (p. 136). Professor Fetter's view is different. He distinguishes between "conservative" and "cumulative" abstinence. *Principles of Economics*, p. 163.

⁴ "The Origin of Interest," *Quarterly Journal of Economics*, April, 1895, pp. 259-261. "Interest is a static income . . . Interest is to be accounted for by a cause that would act in a static society. . . . Creating new capital is not a part of the process by which interest is secured. . . . A static condition excludes abstinence, but admits of the earning of interest."

irksomeness of the later and more fatiguing hours of labor.¹ But Professor Clark does not consider this topic at length, saying that "full study of this point would detain us too long."² I will, therefore, content myself with two general remarks. In the first place the abstinence theory rests on certain premises and leads to certain consequences which cannot be made consistent with Professor Clark's theory of productivity. In the second place the abstinence theory itself has its critical defile, through which the searcher for an explanation of interest must pass. A simple acceptance of its fundamental notions, without express discussion of the difficulties which it presents, cannot be supposed to bring us nearer to any solution.

VI.

I have said much, perhaps too much, on the details of Professor Clark's theory. But I believe that careful and detailed examination is the best tribute of respect I can pay to my honored opponent. What now shall I say in conclusion as to the whole?

I believe that Professor Clark has planted in the midst of rich and ingenious thoughts a fatal notion. This his lively imagination has pictured to him as if it had substance and reality. In fact, it covers up an unsubstantial figure, an empty form of speech and thought. This notion infects his whole scientific system. Wherever it touches, —and unfortunately it touches almost every part of the system,—it dwarfs and withers.

Thus some parts of his teaching, lying nearest to this notion, are simply erroneous, such as the explanation of interest or the theory of the annihilation of periods of

¹ *Quarterly Journal*, July, 1889, p. 503, ff.; January, 1890, 172, ff., besides 190, ff.

² Page 398, *Distribution of Wealth*.

production. Where he succeeds in keeping to the truth of actual life, he is compelled to find his way by artifices which sometimes run directly counter to the natural procedure. Let me call attention, for instance, to his excellent statement of the sufficiently familiar fact that a change in the quantitative relation of the labor and capital leads also to a change in the form of capital, in the kind of labor, and so in the whole process of production.¹ This is a matter sufficiently familiar to every one who understands that the use of "capital" means the application of the "capitalistic" method of production, and that the increase or decrease in the quantity of capital affects the methods of production. Professor Clark, however, approaches this subject from the wrong point of view.² He begins by assuming a given amount of capital (which he states, somewhat superficially, in terms of dollars), and then discovers that a change in the amount of capital leads to a change in its form, and that this change in form leads to a change in the application of labor: whereas the whole change *begins* with a different application of labor.³

In other places Professor Clark's exposition suffers from insufficient development. His propositions are not fully explained. This arises, in part, because his peculiar point of view prevents him from seeing the importance of a full explanation. Partly it is due to the fact that a more detailed statement would bring out certain points at which the theory of true capital comes into conflict with established fact. This conflict is concealed by the absence of complete and explicit exposition. The theory of "capital goods" suffers not less, even tho Professor Clark declares an exposition of this theory necessary side by side

¹ See pp. 159, ff.; 170, 174, ff.; 186, ff.

² 137, ff.

³ That such a method of production may begin at all, it is necessary that people should have subsistence (on the question *which* people must have subsistence, see my *Positive Theory*, pp. 319, 410, English edition). I maintain this opinion, notwithstanding Professor Clark's objections on p. 149. He there combats an inaccurate statement of a proposition which remains fundamentally true.

with that of "true capital." The same essential defect appears in the brevity of the statement of the theory of value. I miss, more particularly, careful exposition as to the value of producers' goods and their relation to the value of the consumers' goods derived from them.¹

It is significant that, notwithstanding the greatest circumspection on the part of Professor Clark, he is unable at times to conceal the inconsistency between that which he teaches in the name of true capital and that which he must teach in view of obvious facts and settled principles. Naturally, these inconsistencies appear when he discusses—briefly, to be sure—capital goods, and especially the bearing of the principle of imputation as to capital goods and true capital. For instance, Professor Clark repeatedly says that capital goods create and earn their gross product.² Now it is fundamental in his system that every factor of production receives that which it "creates," that which "is due to it" or is imputable to it. Hence there must be imputed to a capital good its whole gross yield. Nevertheless, Professor Clark says with equal distinctness—in contradiction, not only to the truth, but to his own doctrines—that the "*net* product" of any instrument, for instance of a concrete capital good, is the *only* product that is imputable to it.³

¹ Various passages in Professor Clark's book touch on the theory of value, but contain no consistent theory of value, touching as they do some points very fully and quite neglecting others. In Chapter XXIV. there are some complicated remarks about the ultimate unit of value. These seem to me similar to the theory of true capital: they afford a second example of Professor Clark's bent for artificial interpretations. Still another example of this characteristic appears in his extraordinary generalisation of the principle of "rent." This leads him to the conclusion, among others, that the wages, even of the most common labor, are to be regarded as rent, arising from its superiority over absolutely useless labor. See p. 350; compare also 191, 349; see Professor Fetter's excellent remarks in his *Principles*, p. 205.

² Pages 270–272, 335.

³ Page 350. This expression is by no means a solitary one. Elsewhere also, see pp. 349, 351, 355, 357, 358, 361, 363. The product of a factor is identified with its net rent. The net rent is what is "traceable" to the factor. This thought is applied not only to "true capital," but in express terms to "capital goods," such as tools, instruments, ships, machines, buildings.

Les extrêmes se touchent. A greater contrast cannot be conceived than that between the systems of Marx and of Professor Clark. The main thesis of the latter is that in modern society, under free competition, every factor tends to receive what that factor has produced. Marx, on the contrary, teaches that the characteristic of modern society is the robbery, by the capitalists from the laborers, of part of the laborers' product. And yet Clark constantly reminds me of Marx and his ways. Both have high powers of systematic thought. Both have an overflowing imagination, with a tendency to mystical construction. In both the starting-point of the systems is found not in facts, but in a dialectic syllogism. Marx's syllogism, going back to Aristotle, finds the essence of the exchange of commodities in an equation of labor quantities. Clark begins by assuming that permanent capital must be something different from the perishable capital goods. Marx strips commodities of every other quality, and treats them as so much labor jelly. Clark thinks of capital as a quantum of value "imputed" in material goods. He strips off everything which may suggest material existence, and retains only a value jelly, existing eternally, never destroyed, which is the true twin of Marx's labor jelly.

Both use the utmost endeavors to keep their systems free from formal inconsistencies. Hence they fail to develop certain topics which would open up such inconsistencies. Marx neglects the effect of competition on value. Clark passes by the theory of capital goods and the theory of the value of producers' goods. And yet with both the inherent inconsistencies in the end necessarily come to the surface.

But I find points of resemblance, not only in their mode of thought, but also, notwithstanding divergence in the outcome, in the substance of their teaching. Two points of resemblance seem to me especially noticeable. Marx,

as is well known, when considering the troublesome fact of skilled labor, gives such labor a much higher value than common labor, and resorts to the dialectic explanation that one day of skilled labor "represents" several days of common labor. In precisely the same way, Professor Clark says that the man of the highest grade "represents many units of labor in the abstract."¹ Again, they resemble each other in their denial or misconception of the influence of time and of periods of production spreading through time. Marx ignores completely the existence of an interval between the exertion of labor and the emergence of an enjoyable product. He denies that the capitalist "advances" wages to the laborer. Hence he concludes that the laborer should receive, at the very instance of applying his labor, precisely the quantity of enjoyable products which will appear in the future as the product of his labor. Professor Clark also teaches that production brings enjoyable results without an interval of time. His only defence against Marx's corollary is to turn to his true capital as a *deus ex machina*: this magical creature has imputed to it those contributions which sober logic would ascribe proximately to capital goods, and in the end to the labor which created the capital goods.²

My criticism of the two is the same. Marx has resorted to empty dialectics, not to facts, as the foundation of his

¹ Page 365.

² The points at which the two sets of doctrine meet and part company may also be defined thus. Both deny and try to eliminate the influence of time. Hence both confound the claims of the several sets of labor exerted at different times. But they do this from opposite directions and with opposite tendencies. Marx fallaciously ascribes to the labor of the present, the claims of labor of the past, in order that he may allot to present labor as much of present product as the earlier labor would be entitled to *to-day*, if the division of the product were not to take place until *to-day*. Clark, on the other hand, no less fallaciously ascribes to present labor smaller claims, corresponding to the less value which such labor undoubtedly has in the present, and puts this present labor in place of that of earlier date. He then can plausibly ascribe to labor in general a less amount of the output than in fact is due to it. Both are guilty of the same confusion as to two essentially different quantities. Marx would turn over to labor the larger amount thus falsely differentiated, Clark would turn over the smaller.

theory of distribution. Clark has resorted to no less empty dialectics in order to combat Marx's reasoning.

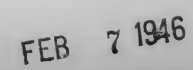
Our science has suffered much from the sway of words; more, perhaps, than any other science except philosophy. Touched by the spirit of modern science, it has begun to consider critically, step for step, wherein its conclusions rest on the basis of facts. Based as it must be partly on empirical psychology, partly on natural science, it endeavors so to develop its doctrines that they shall never be left without foundation, but shall always deal with facts such as the sister sciences can continue to elucidate. But Professor Clark's true capital abides with no such facts. His theory of capital entices us from the sober, solid paths which modern science in all its branches tries to follow. It relapses into a mode of scientific thought from which we have slowly, but successfully freed ourselves. Hence, with every respect for the intellectual quality of my opponent, I must oppose his doctrines with all possible emphasis, in order to defend a solid and natural theory of capital against a mythology of capital.

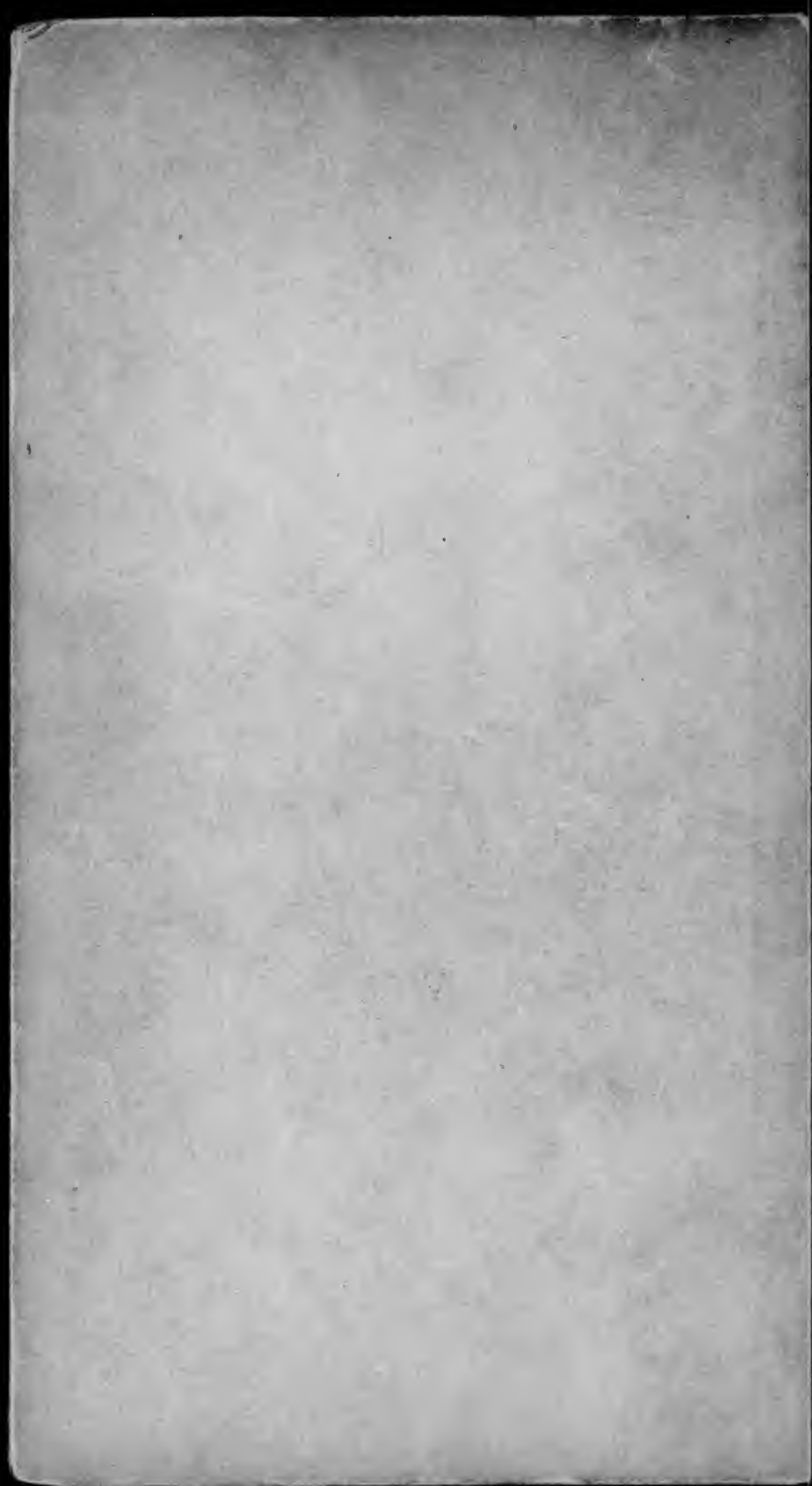
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